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ABSTRACT

This bibliography consists of a listing of papers, reports, and books that discuss and describe observation instruments and methodology and their application in the classroom teaching-learning situation. The entries are presented in three sections: 1) the development of observation techniques and instruments, the use of observation instruments, and statistical considerations related to data collected through observation instruments, and statistical considerations related to data collected through observation methods (85 items); 2) studies in which observation techniques have been used as a research tool (32 items); and 3) papers included in a bibliography compiles by Sandefur and Bressler entitled "Classroom Observation Systems In Preparing School Personnel: An Annotated Bibliography" (39 items). Readers are referred to the Sandefur and Bressler bibliography for annotations of the papers included in section three. (Author)

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OBSERVATION INSTRUMENTS AND METHODOLOGY AND THEIR APPLICATION IN THE CLASSROOM: AN ANNOTATED BIBLIOGRAPHY

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Introduction

This bibliography consists of a listing of papers, reports, and books that discuss and describe observation instruments and methodology and their application in the classroom teaching-learning situation. The entries are presented in three sections: 1) The development of observation techniques and instruments, the use of observation instruments, and statistical considerations related to data collected through observation methods; 2) studies in which observation techniques have been used as a research tool; and, 3) papers included in a bibliography compiled by Sandefur and Bressler entitled "Classroom observation systems in preparing school personnel: An annotated bibliography." Readers are referred to the Sandefur and Bressler bibliography for annotations of the papers included in section three.

A small number of references for which the original papers have not been obtained are included in sections one and two without annotations. Some references are appropriate for inclusion in both sections one and two, and have arbitrarily been placed in section one.

We are aware that this bibliography is far from complete in spite of our efforts, but we hope that the information we have gathered thus far will be useful to others interested in this area of investigation. We solicit information regarding sources that we may have overlooked. Annotations included in this bibliography are from the following sources:

Prepared by Theodore Abramson and Helen Spilman

(ERIC) - ERIC Abstracts

(Author) - Journal Abstract

I. Development and Use of Observation Methods

Abramson, T. Development of improved techniques for establishing the reliability of observation ratings. New York: Fordham University. United States Department of Health, Education, and Welfare, Project No. 9-6-070, Grant No. OEG-2-9-400070-1039(010), 1970.

This study reviews some of the literature on the reliability of observational data and extends the Medley and Mitzel factorial ANOVA model to other designs. An example of the application of one of these designs to the calculation of reliability is included.

Abramson, T. Observation-team reliability determined by analysis of variance, Journal of Experimental Education, 1969, 33, 1-4.

"This report examines the reliability and the sources of variation of a part of an observation schedule using the model first proposed by Medley and Mitzel. Reliability coefficients for the three categories of behavior, mobility, involvement, and irrelevant acts, were found to be .72, .67, and .69 for the entire team. When the data were considered only in terms of the four observers present during both observations the reliability coefficients were .84, .85, and .90." (Abramson)

Adams, R.S. Duration and incident frequencies as observation indices. Educational & Psychological Measurement, 1970, 30, 669-74.

Correlates results of observation data analyzed in terms of frequency and duration ofoccurrence. The Spearman Coefficients were very high thus indicating a good deal of agreement. Author cautions against assumption that the necessary condition is also a sufficient one.

Amidon, E.J. & Hough, J.B. (Eds.) Interaction analysis: Theory, research and application. Reading, Mass.: Addison-Wesley Publishing Co. 1967.

This book contains three major sections related to classroom verbal interaction category systems: (1) Background and theoretical considerations (2) Methodology, uses, procedures, and research, (3) applications to problems of teacher education.

Anderson, R.D. Struthers, J.A., & James, H.H. Development of a verbal and non-verbal observation instrument. Paper presented at American Educational Research Association, Minneapolis, 1970.

This paper describes three forms of the Teaching Strategies Observation Differential (TSOD), its use, and development. The TSOD gives a single rating of a teacher's style. Some data resulting from the instrument's use are presented.

Bellack, A.A. Methods for observing classroom behavior of teachers and students. Paper presented at conference on "Methods of Determining Criteria for the Evaluation of Comprehensive Schools," sponsored by Pädagogisches Zentrum, Berlin, 1968.

This paper is a discussion of methods of observing classroom behavior and contains three major sections: (1) construction of observation instruments, (2) illustrations of observation instruments, and (3) discussion of issues and problems in the use of the instruments. The Flanders, Bellack, and Oliver and Shaver category stystems are described and discussed.

Berlak, H. Naturalistic observation as a research instrument in curriculum development. Paper presented at American Educational Research Association, New York, 1971.

Bijou, S.W., Peterson, R.F., Harris, F.R., Allen, K.E. & Johnston, M.S. Methodology for experimental studies of young children in natural setting. Psychological Record, 1969, 19, 177-210.

Four stages are identified as necessary in field studies. The observations required, the scale and its reliability are discussed in the context of the overall design.

Borgatta, E.F. A new systematic interaction observation system: Behavior scores system (BSs System). J. Psychological Studies, 1963, 14, 24-44.

Presents rationale, definition of, and use of the Behavior Scores System (BSs system) which scores interaction behaviors in small group situations. The relationship of BSs scores to peer assessment is discussed and a study using BSs is presented.

Boyd, R.D, & DeVault, M.V. The observation and recording of behavior. Review of Educational Research, 1966, 36, 529-551.

"...deals with selected theoretical and empirical work in the areas of observational techniques and the collecting and recording of observational data." (Boyd & DeVault)

Brown, B.B. & Bane, R.K. Multidimensionality: A technique for studying the classroom. Paper presented at American Educational Research Association, Minnesota, 1970. ERIC: ED 039 171.

"This report discusses the development and implementation of a program for simultaneous use of three classroom observation systems which measure different dimensions of student behavior. The three

observation systems are the Teacher Practices Observation Record, whose basis is the education of students in the process of reflective thinking; the Reciprocal Category System, which measures behavior along the humanistic dimension: and the Florida Taxonomy of Cognitive Behavior, founded on the view of education as the acquisition of knowledge." (ERIC)

Brown, B.B., Mendenhall, W. & Beaver, R. The reliability of observations of teachers' classroom behavior. Journal of Experimental Education, 1968, 36, 1-10

This study describes the procedures followed in estimating the reliability of the Teacher Practices Observation Record, (TPOR) which estimates the agreement-disagreement of teachers' behavior with practices advocated by John Dewey. The authors discuss the Medley-Mitzel ANOVA technique for estimating reliability and indicate why they felt it was not applicable to their purposes and data. The TPOR reliability coefficients ranged from .48- .62. A copy of the TPOR is included.

Campbell, J.R. & Barnes, C.W. Interaction analysis--a breakthrough? Phi Delta Kappan, 1969, 50, 587-590.

Describes the Flanders' Interaction Analysis System and discusses some current research using this instrument which attempts to identify effective teaching methodologies.

Casey, J.J. New light on the reliability of indicators of quality, IAR - Research Bulletin, 1969, 9, 1-3

Studied interobserver agreement across geographical areas and compared average scores of the groups on "Indicators of Quality."

Clayton, T.E., Cryan, J.R., & Wiles, D.C. A system for recording interaction behaviors in group discussions. Paper presented at American Educational Research Association, New York, 1971.

Describes and illustrates the use of the "Cryles" system to categorize behavior in group discussion settings.

Coates, C., Harvey, O.J., & White, B.J. Observation scales of classroom atmosphere and student behavior: A replication and refinement. Paper presented at American Educational Research Association, Minneapolis, 1970. ERIC: ED 037 409.

This paper describes two process-oriented classroom observation scales developed by Harvey, et al., 1) Teaching Rating Scale, and 2) Student Rating Scale. A research study is reported which offers support for the validity of these instruments.

Collet, L.S. & Semmel, M.I. The Analysis of sequential behavior in classrooms and social environments: Problems and proposed solutions. Paper presented at American Educational Research Association, New York, 1971.

Problems in the analysis of sequential behavior are discussed in relation to observation-coding procedures. A set of heuristic constructs are presented toward the development of a solution strategy for the analysis of chains of interactive behaviors. A proposed analytic computer program is briefly outlined and discussed.

Crispin, D.B. The Technology of Interaction Analysis. Educational Technology, 1970, 10, 13-17.

A brief description of what constitutes an "interaction analysis" system with specific reference to the Flanders' system as an example of such a system. A brief reference to " Profile of Interaction in the Classroom" or PIC is made. PIC is a technique to be used with the Flanders system which speeds up processing time and makes possible quicker feedback to the teacher.

Cunningham, J.L. & Boger, R.P. Development of an observational rating schedule for preschool children's peer-group behavior. Paper presented at American Educational Research Association, New York, 1971.

Describes and discusses the use of the OSB, its reliability calculations, observer training procedures, validity data, and applicbility.

Davis, O.L., Jr. & Slobodian,J.J. Teacher behavior toward boys and girls during first grade reading instruction. American Educational Research Journal, 1967, 4, 261-270.

A new Reading Observation Record wascompared with children's perceptions of interactions and did not yield the perceived sex differences.

Ehman, L.H. A Comparison of three sources of classroom data: Teachers, students, and systematic observation. Paper presented at American Educational Research Association, Minneapolis, 1970.

Emmer, E.T. & Peck, R.F. Dimensions of classroom behavior. Paper presented at American Educational Research Association, New York, 1971.

A factor analytic study on data derived from the application of four observation instruments to identify intra- and inter-instrument factors.

Evans, T.P. A category system for teacher behaviors. American Biology Teacher, 1969, 31, 221-225.

Describes the development and gives a brief example of the use of the Biology Teacher Behavior Inventory (BTBI). The BTBI verbal and non-verbal categories were derived empirically through videotaping and subsequent observing of the teacher's behaviors. The BTBI is thus an inductive category system which contains empirically arrived at exclusive categories of teacher behavior which are purported to be related to the teaching learning situation.

Fink, A.H. Fink interaction analysis system. Paper presented at American Educational Research Association, New York, 1971.

Describes an interaction analysis system designed for use in special classes for the emotionally handicapped. The system includes behaviors that are: (1) verbal and non-verbal, (2) task and non-task, (3) teacher and pupil initiated. There are 16 teacher categories and 16 pupil categories.

Flanders, N.A. Interaction analysis and inservice training. Far West Laboratory for Educational Research and Development.

This paper describes the Flanders' interaction category system and its use. Application and some guidelines for the system's use by teachers during inservice training are discussed. Matrix construction and interpretation and its relationship to teacher behaviors are indicated.

Flanders, N.A. Future developments in analyzing verbal communication in the classroom. Far West Laboratory for Educational Research and Development.

Discusses future developments in the following areas: multiple coding of single events, time line displays, computer assisted coding, and problems in education to which systems of interaction analysis are applicable.

Flanders, N.A. Interaction analysis: A Technique for Quantifying Teacher Influence. Paper presented at American Educational Research Association, Minneapolis, 1970.

Flanders, N.A. Analyzing Teaching Behavior. Reading, Mass: Addison-Wesley Publishing Company, 1970.

This book deals with the problem of improving interaction between a teacher and his pupils. Flander's ten-category system and how

it can be used is discussed, and several chapters on more flexible coding techniques and various arrangements for displaying data are included.

Forbes, J. Micro-PIC: A simple form of the profile of interaction in the classroom. Paper presented at American Educational Research Association, Minneapolis, 1970. ERIC: ED 040 145.

"The Profile of Interaction in the Classroom (PIC) is a feedback method of interaction analysis, based on the Flanders System, created for supervisors of pre-service and in-service teacher education. The Micro-PIC is an abbreviated simplified form for analysis of shorter periods of interaction, particularly in micro-teaching...." (ERIC)

Friedel, A.W. A procedure for observing teacher and pupil behavior in the science classroom. Dissertation Abstracts, 1968, 29, 1361-A.

This paper reports the development of a five-second interval category system based on a communications model and a theory of interpersonal needs. Message behavior was codified into 29 categories; non-message behavior into 5 categories. The system also recorded the (1) sender or performer, (2) message or non-message behavior, (3) channel, and (4) receiver. Scott pi coefficients ranged from .57 to .90.

Among the conclusions were: (1) teacher impersonal message and student non-message behavior predominate in science classrooms, (2) very little reinforcement was given by the teachers.

Gall, D. The use of questions in teaching, Review of Educational Research, 1970, 40, 707-721.

Discusses question classification systems and research in the field of question analysis over a period of fifty years. Suggestions are made for future research in this area of investigation.

Gallagher, J.J. A "topic classification system" for classroom interaction. Classroom Observation, AERA Monograph on Curriculum Evaluation, 6, 1970.

Describes the "Topic Classification System" and its rationale and use.

Gallagher, J.J. Three studies of the classroom. Classroom Observations, AERA , Monograph on Curriculum Evaluation, 6, 1970.

Reports three studies of classroom observation using the Topic Classification System.

Good, T.L., & Brophy, J.E. Analyzing classroom interaction: A more powerful alternative. Report Series, No. 6. Austin: University of Texas, Research and Development Center for Teacher Education, 1969. ERIC: ED 071 837.

Presents rationale for and use of Dyadic-interaction in observational studies and illustrates its use in a study related to the "Pygmalion" effect.

Good, T.L., & Brophy, J.E. Teacher-child dyadic interactions: A new method of classroom observations. Journal of School Psychology, 1970, 8,131-138.

Presents the rationale for, description of, and suggestions for research and consultative applications using "Teacher-child Dyadic Interactions."

Herbert, J. Direct observation as a research technique. Psychology in the Schools, 1970, 7, 127-137.

Discusses the decisions that researchers have to make when they use observational techniques. Also discusses the kinds of research questions that still have to be investigated in terms of the observer and observee effects.

Hertel, R.K. The Markov modeling of experimentally induced marital conflict. Dissertation Abstracts, 1968, 28, 1172-B.

This paper describes the use of Markov chains in the modeling of verbal interaction arising from improvised marital conflict situations. The sequential characteristics of verbal interactions generated by the Markov process were compared to the actual sequences. The feasibility of this approach to sequences of verbal interaction was thus demonstrated.

Kissel, M.A. & Yeager, J.L. An investigation of the efficiency of various observational procedures. Paper presented at American Educational Research Association, New York, 1971

Examined the relative efficiency of various sampling procedures for collecting observational data. The samplings were functions of number of subjects, days, and period of observation.

Kleinman, G.S. Assessing teacher effectiveness: The state of the art. Science Education, 1966, 50, 234-238.

Refers to the 14 summary statements of the Ellena report on teacher

effectiveness and concludes that direct observation and measurement of teacher classroom behavior appears to be a most promising way to investigate teacher effectiveness.

Lantz, D.L. & Medley, D.M. Classroom application of teacher behavior research. Paper presented at American Educational Research Association, New York, 1967. Princeton: Educational Testing Service, RM -67-15.

Discusses the need for and use of observation in teacher education, student teaching, supervision, and self-monitoring.

Longabough, R. A category system for coding interpersonal behavior as social exchange. Sociometry, 1963 , 26, 319-44.

"Theorists have recently used the concept of social exchange as the explanation for interpersonal behavior. In this paper a coding system is proposed for categorizing interpersonal behavior on this basis. Acts are coded on two dimensions: (1) the resource salient - that of value to the interactors and prominent in their interaction; (2) modes - the ways in which resources become salient and are dealt with by the interactors. Modes are seeking, offering, depriving, accepting and not accepting. A pilot study of mother-child dyads where three resources (information, support, and control) are categorized, reveals two variables: the extent of resource exchange occurring and the comparative control of participants over salient resources. These variables relate to father-absence, semantic differential potency ratings, age and sex of the child. It is concluded that coding interaction as an exchange process is both feasible and fruitful." (Longabough)

Mascaro, G.F. Some methodological aspects of systematic categorization of behavior. Perceptual & Motor Skills, 1969, 28, 779-784.

"An analysis of some methodological aspects of behavior categorization was presented. Different systems of categorization were described and the problems of estimating validity and reliability of coding were discussed." (Mascaro)

Massialas, D.B., et al. Structure and Process of inquiry into social issues in secondary schools. ERIC: ED 039 161 and ED 039 162.

Maxey, J.H. Analysis of observational data. Paper presented at American Educational Research Association, New York, 1971.

This paper points out three major difficulties that are typical of many studies that use observational methods and data. These are: (1) the use of inappropriate data units in the analysis of the data, i.e., "students" instead of "teachers" in considering appropriate dfs,

(2) the validity of the design in that a) the definitions of the variables are not tied to a theoretical construct, b) the relationship between the treatment and the results is not clear, and c) the treatment and measurement are contaminated, and (3) the reliability calculations are inappropriate because the intercoder reliability depends on category totals, whereas the data of interest are often cell totals.

Medley, D.M. The language of teacher behavior: Communicating the results of structured observations to teachers. Paper presented at American Educational Research Association, New York, 1967.

Discusses the use of observations in teacher training and supervision.

Medley, D.M. The emerging science of effective teacher behavior. Lecture at Kent State University, June 27, 1966.

Discusses the study of effective teacher behavior through the use of observational techniques.

Medley, D.M. The use of orthogonal contrasts in the interpretation of records of verbal behaviors of classroom teachers. American Psychological Association Symposium, Washington, D.C., 1967. Princeton: Educational Testing Service, RM067-25.

Discusses and illustrates the use of orthogonal contrasts in the development of scoring keys for observational data.

Medley, D.M., et al. A collection of research reports by Medley, Mitzel, and their co-workers, dealing with the use of observation techniques are available at the Center for Advanced Study in Education, Research and Evaluation Unit, City University of New York.

Medley, D.M. & Hill, R.A. Dimensions of classroom behavior measured by two systems of interaction analysis. Educational Leadership, 1969, 27, 821-824.

The study compared two systems for analyzing classroom interaction, the Flanders' system and OScAR 4V. The Flanders' instrument was found more sensitive to student behaviors than OScAR 4V, but was less able to discriminate some teacher behaviors than OScAR. Flanders' system appeared the simpler of the two.

Medley, D.M. & Mitzel, H.E. A Technique for Measuring Classroom Behavior. Journal of Educational Psychology, 1958, 49, 86-92.

This paper describes the use of the Observation Schedule and

Record (OscAR) and its rationale. The data were factor analyzed and led to three factors: (1) emotional climate, (2) verbal emphasis, and (3) social structure.

Medley, D.M., & Mitzel, H.E. "Appication of Analysis of Variance to the Estimation of the Reliability of Observations of Teachers' Classroom Behavior." Journal of Experimental Education., 1958, 27, 23-35.

This paper suggested the use of ANOVA as a procedure for estimating the reliability of data resulting from observations of teacher classroom behavior. The theoretical considersations and procedures are then followed by applications of the techniques to Cornell's and Withall's scales and the data are plotted as a function of number of visits.

Medley, D.M. OScAR goes to nursery school. A new technique for recording pupil behavior. Paper presented at American Educational Research Association, Los Angeles, 1969. Princeton: Educational Testing Service, RM-69-15.

Develops the rationale for and the use of "live" observation using a modified ecological approach. The "PROSE" system is then illustrated.

Medley, D.M. & Mitzel, H.E. Measuring classroom behavior by systematic observation. In Gage, N.L. (Ed.), Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963, 247-328.

Discusses the role of direct observation in research on teaching. Reviews the development of measures of classroom behavior from 1914 through 1963 including pupil participation, teacher behavior, classroom climate, multiple dimensions of classroom behavior, and systematic observation in classroom experimentation. Problems involved in planning an observational study are discussed. A section is included on the reliability of observation data and the analysis of variance technique for estimating reliability is fully discussed.

Meese, M.K. A model for Assessing Complex Educational Outcomes. Paper presented at American Educational Research Association, New York , 1971.

This discussion presents a model consisting of (1) performance test, (2) process goals, (3) and"thinking aloud" to assess complex educational goals. The application of the model to student performance in an individualized mathematics inquiry laboratory is described. Some of the instrumentation and psychometric problems are presented along with the implications of the instruments for further research and curriculum building.

Naylor, J.C. & Schenck, E.A. ρ_m as an "error-free" index of ratio of agreement. Educational and Psychological Measurement, 1966, 26, 815-824.

This paper presents the derivation of ρ_m as an index of rater policy agreement. This expression may be considered as an index of rater agreement corrected for errors resulting from unreliability of judges.

Nelson, M.A., Reynolds,W.W. & Abraham, E.C. Discussion paradigms. Paper presented at American Educational Research Association, New York, 1971.

Presents the relationships of the Classroom Observation Record (COR) to the work of Smith, Bellack, and Taba and indicates how various teaching paradigms may be diagrammed through the use of the COR "tactic." Also indicates how the behavioral objectives stated by the teacher are implemented and describes two experimentally tested discussion strategies.

Nuthall, G.A. A review of some selected recent studies of classroom interaction and teaching behavior. Classroom Observation, AERA Monograph on Curriculum Evaluation, 6, 1970.

Reviews some of the work in classroom observations and indicates the necessity of classroom observation for the building of a theory of instruction.

Ober, R.L. et al. Simultanous use of four different observational systems to assess student teacher classroom behavior. Paper presented at American Educational Research Association, Minneapolis, 1970. ERIC: ED 041-830

"A project was conducted to study the interrelationships of teacher and/or student classroom behavior as measured by four different observation systems employed simultaneously to assess a given teaching-learning situation.... The four systems were: 1) the Receiprocal Category System (RCS), a modification of the Flanders system of verbal interaction analysis; 2) the Florida Taxonomy of Cognitive Behavior (FTCB), an operationalized modification of Bloom's Taxonomy of Educational Objectives: Cognitive Domain; 3) the Teacher Practices Observation Record (TPOR) measuring teacher experimental and non-experimental behavior; and 4) the Taxonomy of Imagery Provocation (TIP) to assess teacher behavior on a concrete to abstract imagery-related continuum." (ERIC)

Ober, R.L., Wood, S.E., & Roberts, A. An instructional manual for the reciprocal category system. Based on a paper read at American Education Research Association, Chicago, 1968.

Description of modified Flanders' system which allows for the same number of categories for teacher and student talk (nine for teacher, nine for student). Guidelines for observers and possible interpretations of various ratios are presented.

Parakh, J.S. To develop a system for analyzing the reactions of teachers and students in biology classes. Cooperative Research Project No. 5-269, Office of Education, U.S. Department of Health, Education & Welfare. Ithaca, New York: Cornell University, 1965. ERIC: ED 013 209.

Peña, D.M. Some statistical methods for interaction analysis. Dissertation Abstracts, 1970, 31, 951-B.

The two-step Markov chain was found to be a better model for interaction data than the one step Markov model. A statistical procedure for testing the difference between two or more sets of interaction data based on the two step process was developed.

Perkins, H.V. A procedure for assessing the classroom behavior of students and teachers. American Educational Research Journal, 1964, 1, 249-260.

This study describes an observation instrument, based in part on segments of earlier instruments and its use. The instrument's reliability and validity are discussed as are comparisons between these data and data generated from the earlier observation instrument. The author concludes that this is a fruitful area for future research.

Psencik, L.F. Interaction analysis improves classroom instruction. Clearing House, 1969, 43, 555-560.

Briefly describes the Flanders system of interaction analysis and its ground rules and discusses the use of interaction analysis as a tool to improve teacher behavior in in-service settings as well as pre-service situations.

Quirk, T.J., Steen, M.T., & Lipe, D. Development of the program for learning in accordance with needs teacher observation scale. Journal of Educational Psychology, 1971, 62, 188-200.

PLAN TOS is described and a study is presented in which it is used to compare PLAN teachers with control teachers. PLAN teachers were found to spend significantly more time in diagnostic and

didactic inquiry and in total individual instruction than control teachers. PLAN teachers spent more time than control teachers in managing learning materials.

Ragosta, M., Soar, R.S., Soar, R.M. & Stebbins, L.B. Sign versus category: Two instruments for observing levels of thinking. Paper presented at American Educational Research Association, New York, 1971.

Used Florida Taxonomy of Cognitive Behaviors (K-1 Form) to record level of thinking of interaction between teachers and pupils and also used sign and category systems and related the observational data to different programs and pupil growth.

Remmers, H.H. Rating methods in research on teaching. In Gage, N.L. (Ed), Handbook of Research on Teaching. Chicago: Rand McNally and Co., 1963, 329-378.

Discusses theoretical and methodological issues concerning rating methods including types of rating scales, sociometric methods, the semantic differential, Q-technique ratings, and the self-anchoring rating scale. Also discusses practical matters related to rating scales involving school administration and teaching.

Reynolds, W.W., Abraham, E.C. & Nelson, M.A. The Classroom Observational Record. Paper presented at American Educational Research Association, New York, 1971.

Description and rationale for the development of the Classroom Observational Record (COR). The COR is an instrument which combines some of Flanders' techniques with some of the ideas of Bellack and Smith and thus looks at cognitive behaviors in an interaction manner. Application of the COR and its use in research and teacher training are also presented.

Rosenshine, B. Some criteria for evaluating category systems: An application to the topic classification system. Classroom Observation, AERA Monograph on Curriculum Evaluation, 6, 1970.

Critiques Gallagher's work on the Topic Classification System and its use.

Rosenshine, B. & Furst, N. Research on teacher performance criteria. In Smith, B.O. (Ed), Research on Teacher Education: A Symposium. New Jersey: Prentice-Hall, 1971, 37-72.

Includes discussion of performance criteria in teacher education, reviews "process-product studies" which investigated the relationship

between observed teacher behaviors and student outcome measures, and makes suggestions for future research on teacher behaviors.

Ryans, D.G. Assessment of teacher behavior and instruction. Review of Educational Research, 1963, 33, 415-441.

Reviews many aspects of research on teacher behavior. Includes an extensive list of teacher-student variables referred to in the literature from 1958 to 1963.

Sandefur, J.T. & Bressler, A.A. Classroom observation systems in preparing school personnel. Office of Education (Department of Health, Education & Welfare). Washington, D.C.: Bureau of Research, March 1970. ERIC: ED 037 377.

Describes some important classroom observation systems that are cognitive, affective, and multidimensional and discusses their use in the preparation of school personnel.

Schwartzbaum, A. & Gruenfeld, L. Factors influencing subject-observer interaction in an organizational study. Administrative Science Quarterly, 1969, 14, 443-449.

Discusses some possible effects that observers may have on subjects being observed and suggests using the experiment to try and estimate the effect and thus make adjustments to the observational data.

Scott, M. Teacher effectiveness: A position. DARCEE Papers and Reports, 1969, 3 (8).

A brief review of the area and an indication of the directions for further research including the use of classroom observation.

Soar, R.S. Advantages of multiple systems over a single system. Paper presented at American Educational Research Association, New York, 1971.

Discusses the view that an item which represents a class of behaviors may be a less powerful predictor than a series of items which represent more discrete behaviors. Includes a study supporting this point of view which used four different observation systems, one category and three sign systems.

Soar, R.S. The nature of effective teaching for young, disadvantaged children. Presented at a Postgraduate Education Seminar, Department of Pediatrics, College of Medicine, University of Florida, January 29, 1971.

This paper reviews some of Soar's earlier work and presents his findings based on the factor analyses of four classroom observation scales, FLAC, TPOR, FTCB, and the RCS. The factor analysis of pupil growth data yielded an abstract-complex and concrete-simple factor.

Soar, R.M., Ragosta, M., Soar, R.S., & Brown, B.B. Florida Taxonomy of Cognitive Behaviors: K-1 Form. Institute for Development of Human Resources, University of Florida.

Describes the Florida Taxonomy of Cognitive Behaviors Form K-1 categories which classifies behavior according to Bloom's taxonomy.

Tittle, C.J. & Handle, C. Research on practical experience in teacher education: a selected, annotated bibliography. Office of Institutional Research and Program Evaluation, Report No. 70-12, July 1970. Division of Teacher Education, City University of New York.

This rather extensive bibliography includes, among its entries on research in teacher effectiveness and research on practical experiences in student teaching, a number of papers related to observations of teacher behavior and interaction analysis.

Uprichard, A.E. Intradimensional validity and interdimensional compatibility as they relate to multidimensionality. Paper presented at American Educational Research Association, New York, 1971.

Discusses the validity of observational data in terms of inter- and intra-dimensional validity and its relationship to unidimensional or multidimensional observation systems. Content, "differential," and construct validity are all discussed and related to the multi-instrument approach suggested by other workers (Ober, etc.) in the field of observational technology.

Verduin, J.R., Jr. Conceptual Modes in Teacher Education: An Approach to Teaching and Learning. Washington, D.C.: American Association of Colleges for Teacher Education (Department of National Education Association), 1967.

Thirteen systems for studying teacher education are described. Included are the models developed by Smith, Taba, Flanders, Bellack, and Gallagher which have been adapted and used in observation research.

Vincent, W.S. Indicators of quality, IAR - Research Bulletin, 1967, 7, 1-5.

Brief description of categories of classroom interaction, their selection, and the testing still required for "Indicators of Quality."

Vincent, W.S. & Casey, J.J. Statistical report on Indicators of Quality, IAR - Research Bulletin, 1968, 8, 1-3

A brief description of four scoring procedures, item analysis, and split-half reliability of "Indicators of Quality."

Westbury, I. The reliability of measures of classroom behavior. Ontario Journal Educational Research, 1967-68, 10, 125-138.

The Flanders' interaction analysis method was used to code behavior and was found to be amenable for use in classrooms of wide variability. This paper discusses the problems of the generalizability and representativeness of classroom interaction data and points out that the usual procedure of interobserver agreement is not sufficient if these data are to be the basis of inferences about "process" and "product" relationships because of the instability of teacher classroom behaviors.

Wilson, S.R. The effect of the laboratory situation on experimental discussion groups, Sociometry, 1969, 32, 220-236.

Used a modified Bales Interaction Technique to observe small groups in laboratory situations. One group had observer present and the other did not have observer present. Each group had a task-oriented or non-task-oriented subgroup. Study concluded that laboratory studies should consider observer an important aspect of the environment in terms of sociometric and task variables.

Wright, M. & Proctor, V.N. Systematic observation of verbal interaction as a method of comparing mathematics lessons. Cooperative Research Project No. 816, Office of Education, United States Department of Health, Education, & Welfare, St. Louis, Missouri: Washington University, 1961.

Wright, C.J. & Nuthall, G. Relationships between teacher behaviors and pupil achievement in three experimental elementary science lessons, American Educational Research Journal, 1970, 7, 477-491.

Tape records were made of seventeen teachers teaching a prescribed three-lesson science topic to Standard Two (third grade) pupils. Teacher behavior variables were identified in the tape-records and correlated with achievement test scores which had been corrected for pupil intelligence

and prior knowledge. Significant correlations were obtained between mean class achievement scores and six kinds of teacher behaviors: patterns and kinds of teacher questioning, teachers' reactions to pupil responses, teacher structuring, revision, and use of thanks and praise. (Wright & Nuthall)

II. Observation Methods Used as a Research Tool

Abraham, E.C., Nelson, M.A. & Reynolds, W.W. Jr. Discussion strategies and student cognitive skills. Paper presented at American Educational Research Association, New York, 1971.

This study used the Classroom Observational Record (COR) to classify classroom discourse during elementary school science lessons into probing and non-probing discussion strategies. The probing strategy was student dominated with the students doing most of the analyzing, concluding and testing. The non-probing strategy was teacher dominated. The audio-tapes were encoded using the COR and were analyzed as a 2x2x2 ANOVA with the factors defined as school, teacher, and discussion strategy. Pre and post-test scores of the Inquiry Skill Measures were also analyzed as a 2x2x2 ANOVA. Analysis indicated that the teaching strategies were closely followed and that the probing strategy increased inferences of urban and suburban students and observations for suburban school students.

Amidon, E. The effect upon the behavior and attitudes of student teachers of training cooperating teachers and student teachers in the use of interaction analysis as a classroom observational technique. Philadelphia: Temple University, College of Education, 1967, ERIC: ED 021 777.

Bemis, K.A & Luft, M. Relationships between teacher behavior, pupil behavior, and pupil achievement. Paper presented at American Educational Research Association, Minneapolis, 1970. ERIC: ED 038 189.

Describes a study using the Southwestern Cooperative Educational Laboratory Interaction Observation Schedule (SCIOS) which examined the relationships among teacher behavior, student behavior, and student achievement. Results showed significant relationships between teacher and pupil behavior and between pupil classroom behavior and pupil cognitive behavior as measured by the Lee-Clark Readiness Test.

Bondi, J.C., Jr. Feedback from interaction analysis: Some implications for the improvement of teaching. Journal of Teacher Education, 1970. 21, 189-196.

Examined through a modified Flanders' system, the teaching behaviors of two groups of student-teachers who had learned interaction analysis. After eight weeks, found significant differences on 15 of 23 dependent measures of teacher verbal behavior in favor of group that received feedback.

Bookhout, E.C. Teaching behavior in relation to the social emotional climate of physical education classes. Research Quarterly, 1967, 38, 336-347.

Used Reed's pupil inventory and a modified OScAR to assess teacher behavior and climate in girls' physical education classes. Factor analysis indicated six factors with most results comparable to earlier work in other subject classes.

Brophy, J.E. & Good, T.L. Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. The Research and Development Center for Teacher Education, The University of Texas at Austin, Report Series No. 25, 1969.

Examines Rosenthal and Jacobson's "Pygmalion effect" through the use of dyadic observations and concludes that it does exist.

Davidson, R.L. The effects of an interaction analysis system on the development of critical reading in elementary school children. Classroom Interaction News Letter, 1968, 12-13.

Denny, D.A. Identification of teacher-classroom variables facilitating pupil creative growth. American Educational Research Journal, 1968, 5, 365-383.

Data based on an observation-schedule constructed to identify the teacher-pupil variables which are related to pupil gain on creativity were collected from 30 sixth grade classrooms. For this population and for Guilfordian measures of creativity it was possible to predict from mean observation score data the classes which gained on the creativity measures during the course of a school year.

Fitzgerald, R. & Murray, K. The effect of perceptual and symbolic models on the verbal behaviors of student teachers. Paper presented at American Educational Research Association, New York, 1971.

This study examined differences in verbal behavior, as measured by Flanders' interaction analysis, between a group of student teachers given verbal instructions in the use of the system and a group given verbal instruction and video-taped lessons exemplifying the categories followed by actual live modeling by the students. There were significant differences in 13 out of 16 comparisons favoring the latter group.

Flanders, N.A. Using interaction analysis in the in-service training of teachers. Journal of Experimental Education, 1962, 30, 313-316.

This study relates the procedures used in inservice training of teachers through the application of interaction analysis. Changes in the amount of indirect behavior by the teachers was reported.

Gill, N.C. Effects of in-service training in discussion skills on classroom interaction patterns. Paper presented at American Educational Research Association, New York, 1971.

This paper used a repeated measures design to assess the effects of in-service training on teacher behavior and found changes in teacher behavior attributable to the training in discussion skills. No information on the scale used and the data collection process was given. However, the description of the categories implies that the VICS or some other Flanders-type system was used.

Good, T.L. & Brophy, J.E. Do boys and girls receive equal opportunity in first grade reading instruction? The Research and Development Center for Teacher Education, The University of Texas at Austin. Report Series No. 26, 1969. ERIC: ED 041 837.

Teacher behavior toward boys and girls during reading instruction was examined through the use of the dyadic - observation technique. No difference was found.

Gordon, I.J. The assessment of classroom emotional climate by means of the observation schedule and record. Journal of Teacher Education, 1966, 17, 224-232.

Used OScAR to assess behavior in the classrooms of teaching interns in Florida. The pupil and teacher behaviors were compared to similar data collected in New York City and Minneapolis. Among the conclusions, it was found that the proportionate frequency of hostile teacher behavior was less at the University of Florida than in New York City or the University of Minnesota.

Kounin, J.S. &Friesen, W.V. Managing emotionally disturbed children in regular classrooms. Journal of Educational Psychology, 1966, 57, 1-13.

This study was an attempt to delineate some dimensions of teaching style that affect the behavior of emotionally disturbed children in Grades 1-2 and 3-5 in regular classrooms. Video tapes were obtained for 1/2 day of 30 classrooms, each containing 1 or more emotionally disturbed children. Scores for deviancy and work involvement were obtained for both disturbed (E) and nondisturbed (Non E) children. Some findings are: (a) Pupils' scores vary between seatwork and recitation settings in the same classroom; (b) E children manifest less school-appropriate behavior than Non E children; (c) teachers who are successful in managing the behavior of Non E

children are also relatively sucessful with E children; (d) techniques of handling misbehavior as such do not correlate with children's behavior; (e) teacher "With-it-ness," techniques of handling group movement, and programing for variety change in learning activities do correlate with children's behavior." (Kounin and Friesen)

Lambert,N.M., Cox H.W. & Hartsough, C.A. The observability of intellectual functioning of first graders. Psychology in the Schools, 1970, 7, 74-85.

This study used Let's Look at First Graders as an observation technique to assess the intellectual functioning within 18 first grade classes. These data were regressed onto reading achievement and Piagetian Assessment Task Performance scores. Concluded tentatively that some types of intellectual functioning in the classrooms can be observed in first graders.

Loflin, M.D., Guyette, T.W. & Biddle,B.J. Implications of the linguistic differences between black-ghetto and white-suburban classrooms. Paper presented at American Educational Research Association, New York, 1971.

This paper presents data on the "...sociolinguistic distribution of syntactic structures..." of black and white pupils and the teachers of black and white pupils in grades 1,6, and 11. The results indicated that white pupils exhibited greater complexity in their verbalizations than black pupils in grade one with the trend being reversed in grade 11. Teachers followed the pattern of their students. General and educational implications were discussed. The data were based on verbalizations in the classroom.

Medley, D.M. Observed teacher classroom behavior and changes in pupil achievement, creativity and anxiety. Symposium presented to the American Psychological Association, Washington, September 1967.

Medley, D.M. Experiences with the OScAR Technique. Journal of Teacher Education, 1963, 14, 267-273.

This paper describes the results obtained in two major studies in which OScAR was used to obtain data on teacher and pupil behavior. In both instances, the hypothesized relationships between observed behavior and measures of pupil growth were not found. However, in the second study differences in behavior between beginning student teachers and more experienced teachers were found to be attributable to their training.

Mendoza, S.M., Good, L. & Brophy, J.E. The communication of teacher expectations in a junior high school. Paper presented at American Educational Research Association, New York, 1971.

Studied "dyadic" interactions in 4 junior high school classes in terms of teacher expectations for high, middle, and low achievers. Found quantitative differences in number of interaction opportunities afforded the pupils with the lows receiving fewest interactions. No qualitative differences found.

Neujahr, J.L. An analysis of teacher communications to individual pupils when instruction is individualized. Paper presented at American Educational Research Association, New York, 1971.

Used a modified Bellack system to examine teacher behavior during individualized instruction in mathematics, social studies, and science. Found that teacher behavior with different pupils is mostly soliciting in nature with structuring and responding functions being performed least.

Oppenlander, L. Classroom interaction and pupil affect. Paper presented at American Educational Research Association, Minneapolis, 1970.

Used Flanders' category system in lowest and highest ability level sixth grade classes in small midwestern town to categorize interactions in arithmetic, science, social studies, and language arts at the beginning and end of semester. Found significant differences between teachers (via ANOVA) on revised I/D. Some of Soar's factors were interpreted in terms of significant differences (via ANOVA) in pupil reported perceptions and were suggestive of further research.

Perkins, H.V. Classroom behavior and underachievement. American Educational Research Journal, 1965, 2, 1-12.

This study used observational and test data to examine student and teacher behavior, learning activity and teacher-role variables related to underachievement in high-ability fifth grade pupils. The results indicated that: 1) underachievers engage in nonacademic work and withdraw more frequently than achievers; 2) both groups spend comparable amounts of time on academic-work-oriented behavior but the achievers spend more time with their peers in social-work-oriented behavior; 3) no sex difference in learning situations was observed; 4) teacher behavior facilitative of learning and student academic-work-oriented behavior were associated with increased achievement, whereas teacher criticism and student withdrawal were associated with decreased achievement.

Quirk, T.J. Comparison of teacher behavior at different grade levels within Project PLAN: A program of individualized education. Paper presented at American Educational Research Association, Minneapolis, 1970.

This paper compared PLAN teachers at elementary, intermediate, and secondary levels on the PLAN Teacher Observation Scale and found that the elementary and intermediate teachers spent more time on individual instruction than did the secondary teachers. A brief description of the PLAN TOS is also included.

Slobodian, J.J. Teacher behavior toward boys and girls during first grade reading instruction, American Educational Research Journal, 1967, 4, 261-270.

Examined teacher-pupil interactions during reading instruction through the use of the Reading Observation Record (ROR), pupil perceptions of interaction and pupil achievement in reading and concluded that there were no sex differences in teachers' reading instruction behavior, or pupil achievement in reading. Findings were in opposition to McNeils' (1964) hypothesized difference in teacher behavior toward boys and girls.

Soar, R.S. Optimum teacher-pupil interaction for pupil growth. Education Leadership, 1968, 26, 275-280.

Reanalyzes 1966 data in terms of optimal level of teacher-pupil interaction in reading, vocabulary, and creativity and concludes that different levels of indirectness are optimal for different subject matter.

Soar, R.S, Soar, R.M., & Ragosta, M. The validation of an observation system for classroom management. Paper presented at American Educational Research Association, New York, 1971.

Used the Florida Climate and Control System to measure classroom behavior in K-1 classrooms in seven experimental programs in Project Follow Through and control classes. The factor scores representing pupil achievement gains and classroom behaviors of teachers and pupils led to encouraging correlations and discriminations in the hypothesized directions.

Solomon, D., Bezdek, W.E. & Rosenberg, L. Teaching Styles and Learning Chicago: The Center for the Study of Liberal Education of Adults, 1963.

Reports a study which involved the identification of the components of effective teaching for adults. Measures of teacher behavior were obtained from students, tape recordings, and trained observers.

Strang, A.E. Efficiency of selected variables to predict observer ratings of teaching performances. Dissertation Abstracts, 1968, 28, 4062-A

This study assessed "more" and "less" effective teachers as indicated by Classroom Observation Record Scores of upper and lower 27% of 229 beginning Georgia teachers. Data from five self-report inventories and one pupil observation scale were then treated by Discriminant Analysis to determine their predictive value.

The paper-pencil inventories did have validity in distinguishing between the "more" and "less" effective teachers with higher correlations between pupil observations and the criterion of observer ratings than the other measures and the criterion.

Taba, H. The teaching of thinking. Elementary English, 1965, 42, 634-542.

This article contains brief outlines of the development of cognitive processes and teaching strategies designed to enhance this cognitive growth. Discussion is in terms of Thinking in Elementary School Children by Taba, Levine, & Elzey, 1964, which categorized teaching behavior into teacher statements which are psychological or managerial in nature and those which are related to the logic and content of the material being taught.

Werry, J.S. & Quay, H.C. Observing the classroom behavior of elementary school children. Exceptional Children, 1969, 35, 461-467.

"In this study of 10 normal children and a group of children with conduct or acting out disorders, evidence has been presented to suggest that a method of direct behavioral observation in the classroom is reliable, can discriminate between normal and emotionally disturbed children, yields meaningful information on the nature of a child's maladjustment to school when it is of the conduct problem type, offers data on the efficacy of a special class program, serves as a sensitive dependent variable measure of various acute therapeutic manipulations, and is comprised largely of independent items. The relevance of this measure to children with problems other than the conduct problem type has not been established." (Werry and Quay)

White, F.J. Observational learning of indirect verbal behavior through the medium of audio-tapes. Dissertation Abstracts, 1969, 29, 3030-A .

This study investigated the effectiveness of audio-tapes as a training medium for pre-service teachers in the use of indirect teacher talk. The group of teachers who were trained with the tapes had a higher I/D ratio on a Flanders IA than the group of control teachers even though both were given the same content outline for the preparation of the model lesson that they taught.

Wilk, R.E & Edson, W.H. Predictions and performance: An experimental study of student teachers. The Journal of Teacher Education, 1963, 14, 308-318.

Describes a study which investigated the relationships among appraisals of teacher education applicants, classroom placement variables, and later teaching behavior. Two observation instruments were used: OScAR III by Medley and Mitzel, and the system developed by Flanders. It was found that classroom placement variables did influence student teacher performance.

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